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Chapter 4

THE CASE OF LITERALLY TRUE PROPOSITIONS WITH FALSE IMPLICATURES

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ABSTRACT

The truth-conditional content of the proposition expressed has been the subject of many debates. The different approaches differ as to the extent and the type of pragmatic inferences allowed into this notion. But a more recent approach offers a seemingly completely orthogonal discourse-based classification. We argue that this classification is crucial for assessing meaning and truth. To test this claim we conducted two experiments. Our stimuli were highly relevant Particularized Conversational Implicatures (PCIs), which are predicted to not influence

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truth-conditional contents. In both experiments, we were interested in the condition where the target sentence was embedded in a story that rendered it literally true while its PCI was false. Results from these experiments indicate that PCIs do influence truth judgments. Literally true proposition with false PCIs were quite often viewed by participants as not true, and even as false to varying degrees. We argue that such judgments testify that speakers evaluate truth based on the strength of the interpretation, regardless of the type of pragmatic inference involved. Thus, not only explicated inferences, but also strong implicatures affect truth judgments.

Keywords: truth, deception, Particularized Conversational Implicatures, false implicatures, Privileged Interactional Interpretation

INTRODUCTION

Three similar tales are told in Genesis 12, 20 and 26. Known in the literature as the Thrice-Told Tales, these tales tell of a family that emigrates from Canaan to a foreign land. During their journey the hero, knowing that the local authorities will desire his beautiful wife and kill him if they knew that he is her husband, asks her to say (or says it himself) that she is his sister. The heroes in Genesis 12 and 20 are Abraham and Sarah, and in Genesis 26 Yitzhak and Rebecca.

Jewish and Muslim commentators disagree on one important fact that renders Abraham's act either as lying or as mere misleading. Muslim commentators mostly held that Abraham and Sarah were not brother and sister, and were therefore faced with an act of lying. The popular Islamic explanation to this lie is "that Abraham and Sarah are the only believers (Muslims) on Earth" which makes them "siblings in a religious sense" (Firestone 1991: 204). One might still wonder whether "metaphorical" lying is not lying nonetheless.[1] Jewish commentators held that Abraham and Sarah were brother and sister (of sorts, as they were cousins) and were therefore faced with an act of telling the literal truth while misleading. One might wonder here whether telling the literal truth while implicating

[1] See Saul (2012: 12–13) for some interesting comments on lying by using metaphors.

something false is not lying after all. This paper focuses on cases such as these (i.e., literally true propositions with false implicatures).

Rashi (~1040–1105), Rashbam (1085–1158), Radak (1160–1235), HaRalbag (1288–1344), HaRan (~1315–1376) and Abervanel (1437–1508), all prominent figures in Jewish thought, treated Abraham's act in Genesis 20 as true, basing their claim on the saying in the Babylonian Talmud (Yevamot 62, 2): "the sons of sons are like sons."[2] That is, Abraham and Sarah being cousins can be construed as being brother and sister. Only Nahmanides (1194–1270) argued differently, claiming that whether Abraham told the truth or lied is irrelevant, since it was his intention to deceive. Another view on the matter, unrelated to the stories in Genesis, is that of Joseph Albo (1380–1444). Albo (Ikkarim 2, 27) sets a rule for distinguishing between lying, misleading and truth. According to this rule, lying is defined from the matter's perspective, when what the mouth says disagrees with "things outside the soul" (reality). That is, if what a person says is incongruent with the objective reality, then that person is lying. Misleading is defined from the speaker's perspective, when the mouth and heart disagree. Here, if what a person says is incongruent with the subjective reality, i.e., what he believes to be true, then that person is misleading. There is also a state of both lying and misleading and that is when what a person says is incongruent with the objective reality and that person knows that this is the case. Truth is when all sides agree (that is, the mouth agrees with the heart and with reality). In the spirit of this rule, one might assume that Albo would have viewed the case above as an act of misleading – assuming that he too accepts the assumption that cousins count as siblings.

It turns out then that while none of the Jewish commentators treated Abraham's act as a full-fledged lie, a few were reluctant to treat it as truth even though what Abraham said was literally true (if we accept the assumption that cousins count as siblings). Put differently, for those few commentators who were reluctant to treat Abraham's utterance as true, the

[2] The treatment of the story in Genesis 20 is the most relevant to our matter since it deals with the lying/misleading aspect of the story. In all other stories, including Genesis 20, Jewish commentators were mainly concerned with the other moral problems that arise from these stories.

literal truth was not enough to justify judging the proposition expressed as true. However, if the literal truth is not enough, which, if any, inferences are relevant for assessing the proposition expressed as true or false? While the different approaches differ as to the extent and the type of pragmatic inferences allowed to play a role in the truth-conditional meaning of the proposition expressed, they all draw a clear distinction between what contributes to the truth-conditional content of the proposition expressed and what does not. A more recent approach, however, offers an orthogonal discourse-based classification, a shift from a Said/Implied dichotomy to an interpretation strength gradation (Ariel 2002a/b, 2008; Sternau 2014, 2015). What we will argue is that this shift is necessary when assessing meaning and truth in real interaction.

Outline of This Paper

We first review the literature on the truth-conditional representation of the proposition expressed (i.e., the basic-level meaning). The review begins with a description of the nature and purpose of the basic-level meaning. It continues with an outline of the evolution of the concept of a basic-level meaning, covering the various definitions found in the literature. We then introduce the lying/misleading dispute, and its contribution to the research question. Last, several psycholinguistic studies are presented in order to shed additional light on the psychological reality of the basic-level meaning. Following this review the assumed status of implicatures as a non-contributing source to what interlocutors view as the basic-level meaning is questioned via two experiments. In this section, the motivation for performing this research and its predictions is provided. And the procedures in constructing and conducting the two experiments is provided with an elaborated discussion on the results and their implications. Last, we summarize the findings and their contribution to the discussion on the basic-level meaning.

LITERATURE REVIEW

What Is the Basic-Level Meaning?

What we say explicitly often means less than the message we wish to convey; in other cases, it means more than what we wish to convey. This incongruence between what we utter and what we mean is manifested via two distinct levels of meaning, agreed upon by all researchers. The first level is the linguistic code, which represents the compositional meaning expressed by the words and their combination apart from context. This level does not usually amount to a complete proposition. The second level is the conveyed meaning, which represents all the communicative intent of the utterance including indirectly conveyed interpretation(s) intended by the speaker of the utterance. This level naturally includes more content than the proposition on its own. In the attempt to capture "just" the basic proposition, a number of intermediate meaning level representations were suggested in the literature. These representations will henceforth be referred to as "the basic-level meaning."

The attempt to define an intermediate meaning level between the linguistic code and the total conveyed meaning was motivated by the need to represent the truth-conditional meaning of the proposition expressed. Initially, it seemed that the linguistic code (the literal meaning) was enough to fulfill this role – but it gradually became clear that this was not the case:

> "The notion of literal meaning was once so unproblematic that it would easily fit Arnauld's description: it was one of those notions that are "so clear that they cannot be explained through others, because there are none which are clearer and simpler than them." But in our century, its fate has not been different from that of so many other notions previously presumed to be "fundamental," and it has been severely challenged." (Dascal 1987: 259)

One of the many challenges on the notion of literal meaning, in respect to its being the truth-conditional representation of the proposition

expressed, was the requirement that it would be strictly compositional. That is to say, the requirement that literal meaning would not involve any pragmatic inferences. This requirement, however, was viewed as impossible considering the underdeterminate nature of the linguistic code (Carston 2004: section 1.2). For instance: the phrase "John's book," a case of sense-construction, can refer to a book John owns, wrote or gave. In determining to which of these many books the phrase "John's book" refers, some pragmatic inferences are required, as the linguistic code alone is insufficient to determine the semantic value of the phrase (Recanati 1995: 209–210). "A semantics pure of pragmatic intrusion," as Recanati (2010: 3) puts it, "… will no longer deliver truth-conditions…."

In summary, all researchers agree that the linguistic code is too poor to represent the truth-conditional meaning intended by the speaker. At the same time, the conveyed meaning is too rich for this purpose. It is also generally agreed upon that there exists a need to define an intermediate meaning level to fulfill this role, and that this level will require some, but not any, pragmatic inferences. The controversy revolves around the extent and type of pragmatic inferences to be allowed in constituting this intermediate meaning level (i.e., the basic-level meaning), as we will see in the next section.

The Evolution of the Basic-Level Meaning

Grice (1975, 1989) was the first to point to the importance of the gap between the linguistic code and the total intended meaning. He proposed that this gap is bridged via pragmatic inferences, all of which he considered implicatures. While doing so, Grice introduced his basic-level meaning: "what is said." To fully identify "what is said" Grice (1975: 44) argued that one must know the identity of the entities denoted by the referring expressions in the utterance (reference fixing) and the meaning of ambiguous expressions in the intended occasion (ambiguity resolution). Despite the pragmatic nature of these enrichments, Grice (ibid.) viewed his basic-level meaning as "closely related to the conventional meaning of the

words (the sentence) ….” That is, for Grice, “what is said” does not differ greatly from the literal meaning described before. All other pragmatic inferences, i.e., implicatures,[3] according to Grice, were not considered as part of “what is said,” since they were calculated on the basis of “what is said,” and carried their own separate truth conditions. For this reason, these implcatures were also not considered as contributing to or influencing the truth-conditional meaning of the proposition expressed. This notion of the basic-level meaning was further developed by the Minimalist approach (Bach 1994; Berg 2002; Borg 2004), which allowed for a limited number of pragmatic inferences to be included in “what is said,” as long as they are grammatically mandated (same as Grice) and not dependent on speaker’s intention (stricter than Grice) (Ariel 2008: 268). We will refer to this level as “what is said$_{min}$.”

But just like its predecessor “literal meaning,” it was argued that “what is said$_{min}$” was also not enough to represent the truth-conditional meaning of the proposition expressed. Carston (1988) provides the following example to demonstrate this point:

1) The park is some distance from where I live (example 14a in Carston 1988: 164).

According to Carston, while (1) is indeed minimally truth-evaluable, this minimalistic representation is meaningless. That is to say, it is trivially true that there is *some* distance between the speaker’s home and the park, but this is (probably) not the interpretation the speaker meant to convey (which is that this distance is too long for walking). Therefore, advocators of the Maximalist view (Sperber and Wilson 1985/1996; Carston 1988, 2004a/b; Recanati 2001, 2010), allow the inclusion of all pragmatic inferences necessary for constructing an intuitive truth-evaluable proposition to be part of their notion of the basic-level meaning. The only restriction is that these pragmatic inferences will be developments of the propositional form (i.e., the Logical Form [LF]). It is this restriction that

[3] Grice distinguished between conventional implicatures and conversational implicatures. Only the latter are relevant to this paper.

distinguishes the pragmatic inferences allowed in constituting the basic-level meaning (i.e., explicated inferences) from inferences that are not allowed (i.e., implicated inferences). We will adopt the relevance-theoretic concept of explicature as representing this level.[4]

As it seems, although the developments of "what is said$_{min}$" and the explicature, differ in the extent and the type of pragmatic inferences allowed in constituting the basic-level meaning, one thing remains the same: these approaches draw a clear distinction between what is part of the basic-level meaning and what is not, and therefore between what contributes to the truth-conditional meaning of the proposition expressed and what does not. While it is agreed upon by all (Grice, Minimalists and Maximalists) that implicatures do not play a role in the truth-conditional meaning of the proposition expressed. A more recent definition for the basic-level meaning, however, does not make this distinction, and offers instead a shift from a Said/Implied dichotomy to a Said/Implied gradation.

In order to define the basic-level meaning interpretation, Ariel (2002a/b, 2008) opts for a flexible basic-level meaning instead of choosing just one of the representations offered in the literature ("what is said," "what is said$_{min}$," or explicature). Ariel defines a Privileged Interactional Interpretation level:

> "This is the meaning which the speaker is seen as minimally and necessarily committed to, i.e., the one by which s/he is judged as telling the truth or being sincere. It is also the meaning which contains the message that the addressee should take to be the relevant contribution made by the speaker." (Ariel 2002b: 1006)

Ariel's basic-level meaning, the Privileged Interactional Interpretation (henceforth: PII), consists mostly of the relevant explicatures, but at times

[4] Explicature is the concept used by Relevance Theory and adopted in this paper. It is not, however, the only concept used to describe the basic-level meaning in the Maximalists' view (e.g. Recanati's [2001] what is said$_{max}$; Bach's [1994] implicitures). We will not address the rather small differences between these concepts since these are quite irrelevant to the question here addressed.

it may involve implicatures, or a representation which is even less than the linguistically encoded content.

Sternau et al. (2014, 2015) proposed the following Interpretation Strength Scale in an attempt to capture the propensity of various representation levels and PII:

Interpretation Strength Scale: Bare linguistic meanings > Explicatures > $\text{Implicatures}_{[strong]}$ > $\text{Implicatures}_{[weak]}$[5]

The interpretation strength scale, according to Sternau (2015: 88): "reflects the relative propensity of each of these representations to constitute PII." That is, while any of these interpretational levels can constitute PII, it is their order which predicts their likelihood to actually constitute the PII. The likelihood of a certain interpretational level to be the PII is determined by its strength in a particular context.

A similar view is held by Jaszczolt (2009). Jaszczolt's basic-level meaning, referred to as the Primary Meaning, may represent minimal, enriched or implicated meanings. This is, according to Jaszczolt (2009: 357), "the meaning which is primarily intended by the speaker and recovered by the addressee." In other words, a basic-level meaning that is interactionally-oriented and not grammatically-oriented.

> "[…] one feels compelled to ask whether it is not necessary to take one more step in the direction of radical contextualism, namely question the construal of this intuitive content as the 'development' of the logical form of the sentence. […] perhaps the overall intuitive content would fare better as the object of study of contextualism when freed from the constraint that it be development of the sentence structure?" (Jaszczolt 2009: 351)

Consider case (2) in respect to the different definitions for the basic-level meaning outlined so far: "what is said_{min}," explicature and PII/Primary Meaning.

[5] We have adopted the scale presented in Sternau (2015).

2) Boss (in a job interview): You have small children. How will you manage the long hours of the job?
HD: I have a mother (Originally Hebrew, June 14, 1996, taken from Ariel 2008: 300).

HD's utterance can have any of the following representations: (M2.1) "I, HD, have a mother."; (M2.2) "I, HD, have a mother who is alive."; (M2.3) "I, HD, have a mother and she will help me (so that I will be able to combine the long hours and taking care of my children)." M2.1 is a proposition that is literally true and represents the Minimalists' basic-level meaning (i.e., "what is said$_{min}$"). M2.2 is a development of the logical form and represents the Maximalists' basic-level meaning (i.e., the explicature). M2.3 adds an implicature calculated on the basis of what the speaker said (being the most reasonable interpretation considering the question posed to HD by the interviewer). Now consider the following background facts: 1) HD has a mother (i.e., "what is said$_{min}$" is true); 2) HD's mother is alive (i.e., the explicature is true); However, 3) HD's mother never helps her with the children (i.e., the implicature is false). With these facts in mind, does what HD said (*I have a mother*) count as true or as false? Ariel (2008: 301) reported that over half of the subjects (55.5%) rendered the utterance in (2) as false. Meaning, over half of the subjects considered M2.3 as the meaning to which the speaker is committed and by which she is judged as telling the truth. Moreover, Ariel reported that the speaker herself considered her utterance to be a lie (that is how she introduced the story to her audience).

Examining case (2) and the results concerning it, it seems that out of the various definitions for the basic-level meaning, only the interactionally-oriented approach was able to capture speakers' truth evaluations.[6] This happened for two reasons. Firstly, since both "what is said$_{min}$" and the explicature were true, case (2) demonstrates that it was the contribution of the false implicature that altered a literally true utterance into being

[6] Recall that the Maximalists' claim against the minimalistic basic-level meaning was that it did not capture the intuitive truth conditional meaning of the proposition expressed. Case (2) demonstrates that the intuitive truth conditional meaning of the proposition expressed, even in the case of explicatures, may not coincide with speakers' intuitive truth evaluations.

considered as false by over half of the subjects. Among the different definitions for the basic-level meaning, only the interactionally-oriented approach allows implicatures to constitute part of the basic-level meaning (i.e., PII) (by which the speaker is judged as telling the truth). Secondly, while "what is said$_{min}$" and the explicature can only be interpreted as true or false and nothing else, PII can be either true or false depending on the interlocutor and on the given context. Recognizing that "there is no unanimity between interlocutors' regarding PII in a given context" (Ariel 2002b: 1037), only the interactionally-oriented approach can explain the results of case (2). That is, why 55.5% of the subjects judged the utterance in (2) as false (showing that the PII they extracted included the implicature), while others did not (showing that their extracted PII did not include the implicature).

Summing up, Ariel (2002a/b, 2008), Sternau (2014, 2015) as well as Jaszczolt (2009) claim that in some cases implicatures, strong ones in particular, constitute part of the basic-level meaning. We accept and support this claim, and set out to examine the role of implicatures in forming the basic-level meaning via the testing of their contribution to speakers' truth evaluations.

The Lying/Misleading Dispute

In the previous section, we addressed the question that lies in the focus of this study: which inferences, if any, contribute to the truth-conditional meaning of the proposition expressed? We did this using the debate about the nature of the basic-level meaning. In this section, we address the same question from a different angle, through the debate regarding the distinction between lying and misleading. The relevance of this debate to our question is not surprising, seeing as it too draws on the broader discussion regarding the semantic/pragmatic division of labor, as several scholars have already pointed out (Horn 2009, Meibauer 2014a).[7]

[7] To clarify: the term "say", as it is used here, encompasses the use of the term "assert" found in the literature that draws from speech act theory. The same is true for the term "misleading",

Before we delve into the lying/misleading dispute, we must demonstrate that it is appropriate to discuss truth-conditional meaning in terms of truthfulness. When a speaker tells the truth ("says"), she is not necessarily being truthful (e.g., when she implicates something false). When she speaks falsely, she is not necessarily lying i.e., being untruthful (e.g., when she speaks metaphorically). In these cases, the literal truth-value of the proposition does not coincide with its truth-evaluation by ordinary speakers.

The license, however, to discuss truth in terms of truthfulness stems from the rationale behind discourse-based linguistics. Only if we anchor the basic-level meaning to the interlocutors in real interaction will we be able to capture the speakers' truth-evaluations (which indeed may be distinct from traditional views on truth-conditional content). Anything else results in definitions for the basic-level meaning that analyze a proposition in the abstract, and ends up with discourse detached notions. For this reason, our question, which concerns the nature of the basic-level meaning, can benefit from discussions of lying. The contribution from the debate about lying is even more significant considering that the distinction between lying and misleading is tied to what it means to be "said" – as we will see next.

Among the various criteria employed in the definition for lying regarding a speaker uttering p is the criterion that a speaker says p. It is possibly the only criterion that is not controversial.[8] When a speaker says something that is false, or believed by the speaker to be false, with the intention to deceive – then that speaker is lying.[9] The treatment of implied meanings, on the other hand, is a different matter altogether, and a point of division in the lying/misleading dispute. Horn (unpublished paper a/b), following Saul (2012), argues that lying while saying the truth by using false implicatures, while a misleading act, is not a lie. Meibauer (2005,

which is intended here as encompassing the use of the term "deception" found in the literature on lying.

[8] What is meant by "say" is, of course, a highly controversial matter, as demonstrated in the previous section.

[9] For a discussion on actual falsity vs. the belief in falsity see Turri and Turri (2015) and Wiegmann et al. (2016); for a review on the deceptionists/non-deceptionists debate see Horn (unpublished paper a/b).

2011, 2014a/b, 2016), on the other hand, extends the notion of lying to include false implicatures, even if what the speaker says is true. Each claim stems from a different view on the distinction between lying and misleading. Horn (ibid.), Saul (ibid.), and Adler (1997) argue for a general alignment of lying/misleading and "what is said"/"what is implicated." Meibauer (2005: 1381) abandons the notion of misleading and defines lying according to the total significance of the utterance: "what is said" and "what is implicated." So, where does the truth lie?

Let us assume that "what is said" can potentially include implicatures. If this is the case, then the lying/misleading dispute becomes moot. If implicatures are (sometimes) part of "what is said," when false, they will be considered lies. When implicatures are not part of "what is said," when false, they will be considered misleading acts. Such a selective inclusion sides with Meibauer when false implicatures are part of "what is said" obliterating the distinction between lying and misleading. But the analysis sides with Horn and Saul when false implicatures are not part of "what is said" in which case they count as misleading. But can "what is said" include implicatures? Generally speaking, the answer seems to be no. But in cases where the implicature is highly relevant it can constitute part of the basic-level meaning and affect speakers' truth evaluations.

The contribution of the lying/misleading dispute is then twofold. From a theoretical point of view, it supports the claim that in some cases implicatures can and should be part of the basic-level meaning. These cases are where a false implicature is considered an act of lying rather than as an act of misleading. From a practical point of view, it provides a platform upon which a paradigm for testing the truth-conditional meaning of the basic-level meaning can be built, as will be demonstrated in the following sections.

The Psychological Reality of the Basic-Level Meaning

Findings from psycholinguistic studies can be used to shed additional light on the psychological reality of the basic-level meaning. Some of the

most prominent studies concerned with the role of implicatures in forming the basic-level meaning will be reviewed, with respect to two aspects. First, we will review studies in which participants recognized the implicature as the meaning representing what the speaker said. We will argue that this occurred because the implicature was viewed as the most relevant contribution made by the speaker. Next, we will review studies in which the implicature contributed to the perceived truth-conditional meaning of what the speaker said. Here we will argue that in some cases implicated inferences function like explicated inferences and impact truth evaluations. The following studies deal with two types of implicatures: Generalized Conversational Implicatures (GCIs) and Particularized Conversational Implicatures (PCIs). Following is a brief description of each of these implicatures.

Grice (1975) divided conversational implicatures to GCIs and PCIs. Grice (1975: 56) considered the former to be conversational implicatures that are "normally carried by saying that p." That is, words, or combinations of words, which normally lead us, regardless of context, to infer a certain meaning. PCIs were described by Grice (1975: 56) as interpretations which are "carried by saying that p on a particular occasion in virtue of special features of the context […]." Neither GCIs nor PCIs were considered by Grice as part of "what is said," and as contributing to the truth conditions of the proposition expressed.

The contribution of GCIs to the truth-conditional meaning of the proposition expressed has been subject to substantial debates in the literature. In short, while some (Neo-Griceans[10]) treat them as implicatures, others (Relevance-Theorists) treat them as part of the basic-level meaning. In other words, while some view them as a non-contributing source to the truth-conditional meaning of the proposition expressed, others view them as contributors. PCIs, on the other hand, are neither expected to represent the basic-level meaning of "what is said$_{min}$"/the explicature, nor to influence the truth-conditional meaning of any of these interpretational

[10] For a detailed description of the New-Gricean thought see Horn 1989, Levinson 2000, and also Ariel 2010: section 5.2.

levels. Mainly because more than GCIs, PCIs are crucially dependent on context. Our paper focuses on the harder case of PCIs.

Implicatures as Representing What the Speaker Said

Nicolle and Clark (1999) based their study on a prior one performed by Gibbs and Moise (1997). We will outline their experiments 1 and 2 as these are the most relevant to our discussion. The stimuli used in these experiments were comprised of different types of GCIs.[11] In the first experiment, participants were asked to read a short context story after which a target sentence appeared. The experiment was conducted under three conditions. At each condition participants were asked to select the paraphrase of the target sentence that best reflects: Condition 1) What the sentence said; Condition 2) What the speaker's words meant; Condition 3) What the speaker wanted to communicate. Paraphrases were either an explicature or a strong implicature. Following is an example of one of the items used in the experiment, where paraphrase (a) represents the explicature and (b) the implicature (Nicolle and Clark 1997: 353).

3) Mary and Peter were at a party. There was a lot of drink around and Mary hadn't had anything to eat before the party. After a while Mary staggered up the stairs and into the bathroom. When she emerged, looking very pale, somebody asked Peter if Mary had been sick. Peter replied, '*She was in there for a while.'*
   a) Mary was in the bathroom for a long time
   b) Mary might have been sick

Note that, while the stimuli used were GCIs, the actual decision was between (a) an explicature and (b) a strong implicature which was a strong PCI. Results from the first experiment showed that participants preferred a

[11] Stimuli, which was mainly replicated from Gibbs and Moise (1997), included the following GCI types: cardinal sentences (e.g. Billy's got two footballs), quantifier sentences (e.g. There was glass everywhere), inalienable possession sentences (e.g. I've twisted an ankle), time–distance sentences (e.g. She was in there for a while), and temporal relation sentences (e.g. Last year Jane turned 21 and Bill gave her a pearl necklace) – examples are taken from Nicolle and Clark (1999) appendix A.

highly relevant PCI in preference to an enriched explicature. In the second experiment, stimuli were similar to those used in experiment 1, but two modifications were made. First, instructions were presented after each stimulus (and not just once at the beginning, as in experiment 1). Second, stimuli were followed by a choice of four paraphrases embedded in a "S said that..." clause. Paraphrases included: a minimal-proposition (a), an enriched explicature (b), a strong implicature, specifically a PCI (c) and an incorrect response (d). Following is an example of one of the items used in experiment 2 (ibid.: 354).

4) Peter was a scruffy man; for example, all of his socks had holes in them, but he refused to buy any new pairs. This really annoyed his partner, Mary, who offered to buy him some new socks. When Peter said that new socks would make an ideal Christmas present, Mary said, *'Christmas is still some time away.'*
   a) Mary said that Christmas had not yet arrived
   b) Mary said that it was a long time until Christmas
   c) Mary said that she couldn't wait till Christmas
   d) Mary said that getting socks as a Christmas present was really sad

Results from this experiment too showed that over half the time participants selected implicatures, that is the PCIs, as best representative of what the speaker said. Overall, Nicolle and Clark (ibid.: 351) demonstrated that participants' selection reflected their interpretation of the "overall communicative intention behind the utterance" even when that interpretation was a (strong) PCI.

Bezuidenhout and Cooper (2002) tested the results obtained from Gibbs and Moise (1997) and Nicolle and Clark (1999). For our purposes, we will focus on the procedures and the results from experiment 2. Stimuli included the categories used in Nicolle and Clark (1999) with an added category of perfectives (e.g., I've had breakfast).[12] Participants were

[12] See note 11.

instructed to read target sentences appearing at the end of a context story. Each target sentence was followed by five paraphrases: a minimal interpretation, an explicature, a strong implicature, a weak implicature, and an implicated premise[13]. Similarly to Nicolle and Clark's experiment (1999), while the stimuli used were GCIs, the paraphrases of the strong and weak implicatures were PCIs (see example (5)). The experiment also included an instruction condition. For each condition participants were asked to select the paraphrase of the target sentence that best reflects: Condition 1) What the speaker said; Condition 2) What the speaker meant to communicate; Condition 3) What the speaker's words meant. Following is an example of one of the items used in the experiment (Bezuidenhout and Cooper 2002: 441):

5) Jane was planning to spend a week in Memphis. She couldn't decide which of her friends, Brian or Paul, to stay with. Jill, who knew that Jane was allergic to animals, said, "Brian has three cats."
   (Minimal proposition) . . . Brian has at least three cats.
   (Explicature paraphrase) . . . Brian has exactly three cats.
   (Strong implicature) . . . Jane should stay with Paul.
   (Weak implicature) . . . Brian likes cats.
   (Implicated premise) . . . Brian's cats will cause Jane to have an allergic reaction.

Results from experiment 2 indicated that strong implicatures paraphrases, i.e., strong PCIs, were chosen most frequently (38.43%), followed by explicatures (23.55%), implicated premises (22.56%), weak implicatures (9.17%), i.e., weak PCIs, and finally minimal phrases (6.3%). No significant difference was found in respect to the instruction conditions.

[13] Relevance Theory distinguishes between implicated premises and implicated conclusions (both involve pragmatic processes). Implicated premises are assumptions used in processing the utterance's implicatures (implicated conclusions), but are not part of the speaker's communicative intention. Implicated conclusions, on the other hand, are a part of the speaker's communicative intention (Sperber and Wilson 1986/1995; Carston, 2004). The term "implicature" as used in this paper is restricted to implicated conclusions.

Sternau (2014) set out to examine which of the various levels of interpretation is considered by interlocutors to be the communicated message. In a series of four experiments, Sternau tested the hierarchy of the linguistic meaning, the explicature, strong implicatures and weak implicatures in respect to discourse coherency, confirmability and deniability.[14] We will focus here on experiment 2.

Experiment 2 was designed as an online test and tested participants' ability to confirm each of the levels, mentioned above, as the communicated message. Participants were asked to read a short text and decide whether the target sentence is true or false according to the speaker. Each text was provided in four versions, which rendered the same target sentence as representing one of the four interpretational levels. Following is an example of a strong implicature which was a strong PCI:

6) A student knocks on the door of her professor's office
Professor: Yes?

Student (slightly opening the door): Excuse me. Could I meet with you now?

(Trigger sentence:) Professor: Yes, but I don't have much time now.

(An unbiasing sentence-context:) Please, have a seat.

(Target sentence:) According to the Professor, the meeting will be short.

After deciding whether the target sentence was true or false, participants had to rate their confidence with their answer. Results of Yes/True responses for each interpretational level indicated a partial

[14] Sternau distinguishes between Deniability and Cancelability. The original Gricean term, Cancelability, distinguishes between semantic meanings and pragmatic inferences. Deniability, on the other hand, is meant to distinguish between interactionally stronger and weaker interpretations within discourse. Sternau stresses that there is a dependency between the two. If P is cancelable it does not mean that it is deniable – but if P is deniable, it means that it is also cancelable.

hierarchy in confirmability. Linguistic meaning and explicatures were considered true most often (both received M = 0.94), followed by strong PCIs (M = 0.80), and last were weak PCIs (M = 0.60). Response time to Yes/True responses did not yield any significant difference in respect to the different interpretational levels. Participants' degree of confidence for Yes/True responses showed that it was easier for participants to confirm the explicature, as the communicated message compared to strong and weak PCIs. Overall, these results demonstrate that in more than half of the cases, participants recognized PCIs (strong and weak) as being the communicated message, albeit less confidently.

Implicatures' Contribution to the Truth Conditions of What the Speaker Said

A pioneering study by Coleman and Kay (1981) examined the difference between prototypical and peripheral lies.[15] Coleman and Kay (ibid.: 28) proposed three conditions for defining a proposition (P) as a (good) lie: 1) P is false; 2) Speaker (S) believes P to be false; 3) In uttering P, S intends to deceive an addressee (A). The researchers prepared stories in which none, one or more than one of these conditions were met. Participants were asked to rate on a scale of 1–7 their level of certainty that the speaker in the story lied, where "1" reflects that the participant was very sure that the speaker did not lie, while "7" reflects that the participant was very sure that the speaker did lie. Following is an example of story 6 used in their experiment. According to Coleman and Kay, this story fulfills condition 3 but it does not fulfill conditions 1 and 2.

7) John and Mary have recently started going together. Valentino is Mary's ex-boyfriend. One evening John asks Mary, 'Have you seen Valentino this week?' Mary answers, 'Valentino's been sick with mononucleosis for the past two weeks.' Valentino has in fact

[15] Coleman and Kay's main aim, different from ours, was to demonstrate that categories are not composed of members satisfying a list of necessary and sufficient conditions. Rather, that membership in a category is a gradient matter, where members in the category satisfy a list of conditions to varying degrees (if at all).

been sick with mononucleosis for the past two weeks, but it is also the case that Mary had a date with Valentino the night before. Did Mary lie?

One of the many findings produced by this study was that some of the stories that were literally true (condition 1 was not met) were still rated by participants as lies (e.g., the story above received the mean average of 3.48). In addition, researchers found that among the three conditions described above, condition 1 ("P is false") was the least important condition in participants' rating P as a lie. In other words, results from Coleman and Kay (1981) indicate that truth evaluations for lying/telling the truth are not necessarily and exclusively based on whether the proposition expressed is true or false.

Larson et al. (2009) tested the case of GCIs. In their experiment, participants were asked to read a short conversation, and to evaluate the truth of the target sentence in the conversation in respect to a given fact.[16] The target sentence in the following example (8) is Sam's reply to Irene. Four stimulus types were used: entailments, contradictions, GCIs and fillers[17]. Following is an example of a Q-based GCI item (ibid.: 78):

8) Irene: Who can register for the advanced seminar?
Sam: Juniors can register.

[16] Larson et al. (2009) also applied three different conditions for the instructions. In the first condition subjects were trained to evaluate the truthfulness of an utterance from the perspective of a fictional character they named Literal Lucy. This character was introduced to subjects as "a literal-minded individual". In the second and third conditions, no training was included and subjects had to evaluate the utterance "interpreted literally is true or false" or "is true or false" respectively. They referred to the first condition as Literal Lucy, the second as Literal No Lucy and the third as No Literal No Lucy. Larson et al. found that, in the case of GCIs, the existence of a third person literal-minded perspective enhances the ability for interpreting literally. Something similar was found in Nicolle and Clark (1999: 348) who found that "embedding paraphrases in a 'S said that...' clauses makes the distinction between what is said and what is implicated marginally more accessible…".

[17] As their fillers, Larson et al. (2009) used what they referred to as Necessary Contextual Elements (NCEs). NCEs involved pragmatic inferences necessary to the establishment of a truth evaluable meaning (even according to Grice). The NCEs they used in their experiment were ellipses, indexicals, and pronoun resolutions.

FACT: Anyone who has completed his or her first year of study can register. (Taken from Larson et al. 2009: 78).

Larson et al. assumed that if participants will evaluate the target sentence as "false" this would imply that GCIs are incorporated in the truth-conditional meaning of the target sentence and vice versa. The overall results of false responses[18] indicated a significant effect of the stimulus type: entailments (5%), GCIs (44%), NCEs (93%) and contradictions (99%). A closer look at the results obtained from the category of GCIs revealed that the different GCIs were not treated the same (the median of false responses ranged from 12%–82%). That is, while GCIs were sometimes incorporated into the truth-conditional meaning of "what is said," some GCIs were more likely to do so than others. Another interesting discovery was "that GCIs seemed to form a continuum with respect to the degree they were incorporated into truth-conditional meaning, a finding not predicted by either neo-Gricean or post-Gricean approaches" (ibid.: 84). According to Larson et al. this might suggest that it is the strength of the implicature that influence its incorporation to the truth-conditional meaning of "what is said."

What the findings described in this section suggest is that the role of implicatures, PCIs in particular, is more prominent than previously considered. Once an implicature is viewed by interlocutors as the most relevant contribution made by the speaker, it can represent what the speaker said and affect the perceived truth-conditional content. In these cases, implicated inferences function as explicated inferences. This does not imply that all pragmatic inferences contribute equally to the basic-level meaning. Results from Sternau (2014) and Larson et al. (2009) demonstrated that the strength of pragmatic inferences can be plotted on a gradable continuum. These findings do imply, however, that the basic-level meaning which served participants in their decisions was not rigid, but flexible.

[18] A false response represents incongruity between the target sentence and the fact. So, in the case of entailments "true" responses were expected and in the case of contradictions "false" responses were expected.

TESTING THE HYPOTHESIS

The various definitions for the basic-level meaning demonstrated that there is a gradual recognition that some inferences play a role in the truth-conditional meaning of the proposition expressed. The psycholinguistic studies demonstrated that these inferences can even extend beyond the Maximalists' definition for the basic-level meaning, and that the distinction between explicated and implicated inferences is not all that clear-cut.

The goal of this study is to continue the exploration of the role of inferences in forming the basic-level meaning. This will be done by focusing on cases where there exists a conflict between the truth value of "what is said$_{min}$"/explicatures on the one hand and the implicature on the other hand (see example (2)). Our stimuli will comprise PCIs which, unlike explicated inferences and GCIs, are not expected to influence the truth-conditional meaning of "what is said$_{min}$"/explicatures. More precisely if so, the purpose of this study is to demonstrate the influence of PCIs on speakers' truth evaluations via cases in which what the speaker said is literally true but the PCI is false. We predict that even in such cases the PCI will influence truth evaluations of what the speaker said. We also predict that the nature of these evaluations will not be unanimous among participants. These predictions lend support to the basic-level meaning advocated by the interactionally-oriented approach, which allows for PCIs to count as part of the basic-level meaning (i.e., PII) when context demands.

To test these predictions, we employed an offline test (Experiment 1) and an online test (Experiment 2). In both tests, we were interested in the condition in which the target sentence was embedded in a story that rendered it literally true while implicating something false (condition 2). This condition was then compared to a control condition, in which we used the same target sentence but embedded it in a similar story that rendered it literally true and nothing else (condition 1). In both conditions, "what is said$_{min}$" and the explicature are true. Therefore, any differences between the two conditions will be attributed to the existence of the false PCI.

EXPERIMENT 1

Experiment 1 was designed as a pen and paper questionnaire and participants were asked to perform truth evaluations.

Participants

Twenty-Eight Hebrew native speakers participated in the experiment (12 women, 14 men, and 2 participants who did not report their gender; mean age 27.8, SD = 5).

Stimuli

Stimuli included 12 base-stories (items) ending with a sentence uttered by one of the characters in the story. The last sentence was the target sentence on which participants were asked to perform their truth evaluation and in respect to the story that it followed. Each story had two versions. Thus, the 12 base-stories appeared either in condition 1 or condition 2. Stories in condition 1 rendered the target sentence as literally true and nothing else. Stories in condition 2 rendered the target sentence as literally true while implicating something false. The target sentence following the story was identical in both conditions. The stories were organized in two lists. List 1 included 6 items in condition 1 and the remaining 6 items in condition 2. For list 2, the 6 items in condition 1 were now in condition 2 and the 6 items in condition 2 were now in condition 1.

Following the presentation of each item participants were asked to perform two tasks: (1) to rate the truthfulness of the speaker's statement on a scale of 1–7, and (2) to rate how confident they feel about the correctness of their answer, again on a scale of 1–7. For the first task (truth evaluation), two versions were constructed: In the first version, participants were asked to rate the degree to which "the speaker told the truth." In the second version, they were asked to rate the degree to which "the speaker

lied." Thus, each list was presented twice – once with each question. The combination of the question-type with the list-type led to the creation of four questionnaires, and enabled us to test each target sentence in both conditions and per each type of question.

Following is an example of one base-story as it appeared with the two tasks. The target sentence is the last sentence (italicized). The italicized words within the text (can't/can) demonstrate how we manipulated the stories to create the two conditions (can't = condition 1, can = condition 2). In the actual questionnaire, the changes (one to three words) were not marked; but the target sentences were presented in bold.

Item 1:

Danny and Ronen decided to go to the movie 'Monsters' later in the evening. At noon, Yossi called Danny and asked him if he wants to do something in the evening. Danny replied that he already made plans to go see a movie. When Yossi asked him if he can come along, Danny replied that he *can/can't*. Danny's Mom forbids him to spend time with Yossi, because she believes he is a bad influence on him. Therefore, in the evening when Danny came to ask her for money to the movies, she asked him who he is going with. Danny replied: "*I'm going to the movies with Ronen*."

The Speaker Told the truth

1	**2**	**3**	**4**	**5**	**6**	**7**
Highly disagree	Disagree	A bit disagree	Neutral	A bit agree	Agree	**HIGHLY AGREE**

How confident are you of your previous answer?

1	**2**	**3**	**4**	**5**	**6**	**7**
Uncertain at all	Uncertain	A bit uncertain	Neutral	A bit certain	Certain	**VERY CERTAIN**

Truth evaluations, for the first task, were measured on a scale of 1–7. Thus, in "the speaker told the truth" version the value "7" reflects that the participant viewed the target sentence as true, while "1" reflects that the participant viewed the target sentence as a lie. For "the speaker lied," questionnaires, the scale remained the same (7 = highly agree, 1 = highly disagree) but results were reversed when the data was analyzed.

Results

An analysis of participants' responses shows that participants perceived target sentences when they were literally true while implicating something false (condition 2), as less true, and even as lies, compared to when they were only literally true (condition 1). We extracted participants' truth evaluations of target sentences for each condition. A two-tailed paired t-test yielded a significant effect of the condition on participants' truth evaluations: $t(27) = 9.64$, $p < 0.001$, where condition 1 ($M = 5.30$, $SD = 0.91$) was viewed as more true than condition 2 ($M = 3.20$, $SD = 0.99$).

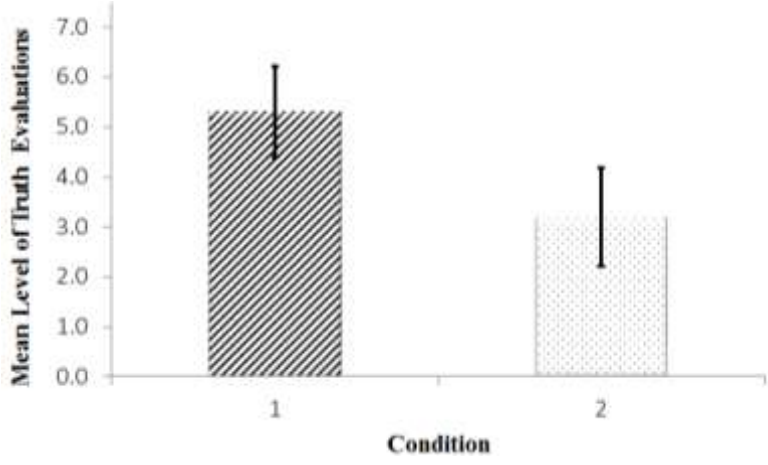

Figure 1. Participants' Mean Level of Truth Evaluations per Condition (1 = Literally True vs. 2 = Literally True with a False PCI).

An analysis of participants' confidence regarding their truth evaluations reveals that target sentences that were literally true while implicating something false (condition 2), were evaluated in the same level of confidence as target sentences that were only literally true (condition 1). A two-tailed paired t-test showed that the mean level of confidence for condition 1 (M = 6.10, SD = 0.67) compared to condition 2 (M = 6.01, SD = 0.75) did not yield a significant effect: $t(27) = 0.619$, $p = 0.54$.

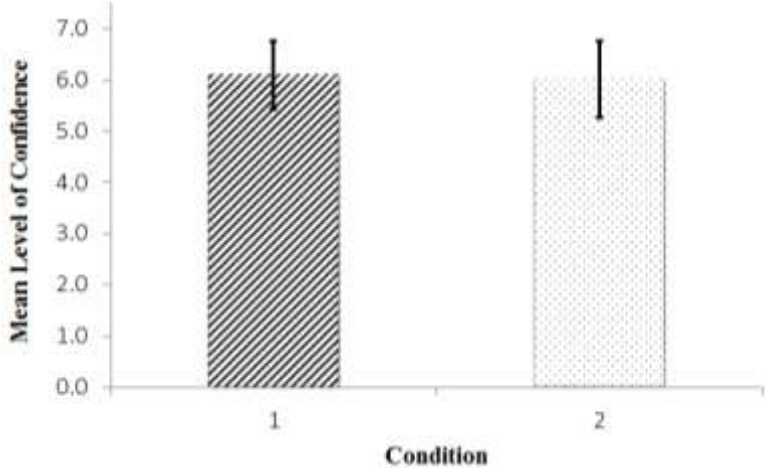

Figure 2. Participants' Mean Level of Confidence per Condition (1 = Literally True vs. 2 = Literally True with a False PCI).

We then focused on responses for condition 2 only: we compared participants' confidence when they viewed the items in condition 2 as true (truth value was larger than 4) to when they viewed the items in condition 2 as lies (truth value was smaller than 4).[19] A two-tailed t-test revealed that the mean level of confidence for items in condition 2 that were viewed as true (M = 6.04, SD = 1.21) compared to items in condition 2 that were viewed as lies (M = 6.21, SD = 0.78) did not yield a significant effect: $t(150) = 1.040$, $p = 0.30$.

[19] Neutral truth values (=4) were discarded.

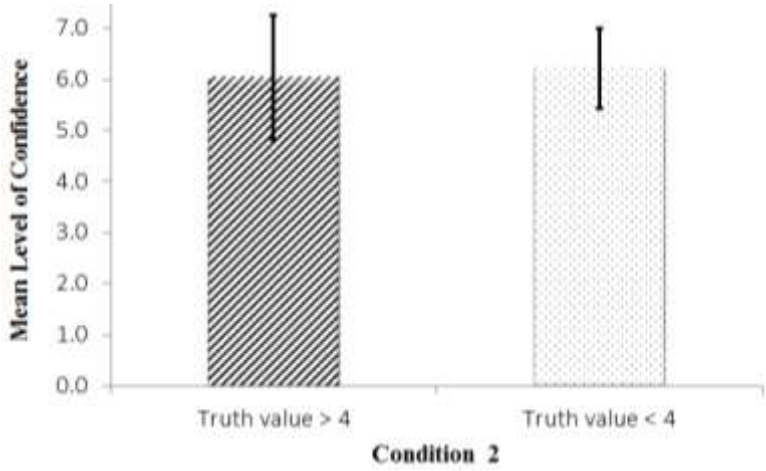

Figure 3. Participants' Mean Level of Confidence for Condition 2 (Truth value > 4 = Truth value was larger than 4 vs. Truth value < 4 = Truth value was smaller than 4).

We also predicted that truth evaluations will vary among participants. Our findings show that when presented in condition 2, each of the 12 items was perceived, at least once, as true (graded over 4) and, at least once, as a lie (graded under 4). That is, each item in condition 2 was perceived as true by some participants and as a lie by others. Also, most of the participants (24 out of 28) perceived the items in condition 2 as true at least once (graded over 4) and as a lie at least once (graded under 4).[20] In other words, in most cases a participant encountering items in condition 2 sometimes evaluated them as true and sometimes as lies.

An analysis of the influence of the task's version ("the speaker told the truth"/"the speaker lied") performed on participants' truth evaluations reveals that items in both conditions were perceived as more true in "the speaker told the truth" version than in "the speaker lied" version. A two-tailed paired t-test yielded a significant effect of the task's version on participants' truth evaluations for condition 1: $t(11) = -2.79$, $p < 0.01$, where condition 1 in "the speaker told the truth" questionnaires ($M = 5.67$, $SD = 0.67$) was viewed as more true than in "the speaker lied"

[20] Three of the subjects perceived all items in condition 2 as lies (less than 4) and one subject perceived all items in condition 2 as true (more than 4).

questionnaires (M = 4.93, SD = 1.40). Similarly, a two-tailed paired t-test yielded a significant effect of the task's version on participants' truth evaluations for condition 2: $t(11) = -3.49$, $p < 0.01$, where condition 2 in "the speaker told the truth" questionnaires (M = 3.70, SD = 0.88) was viewed as more true than in "the speaker lied" questionnaires (M = 2.68, SD = 1.09).

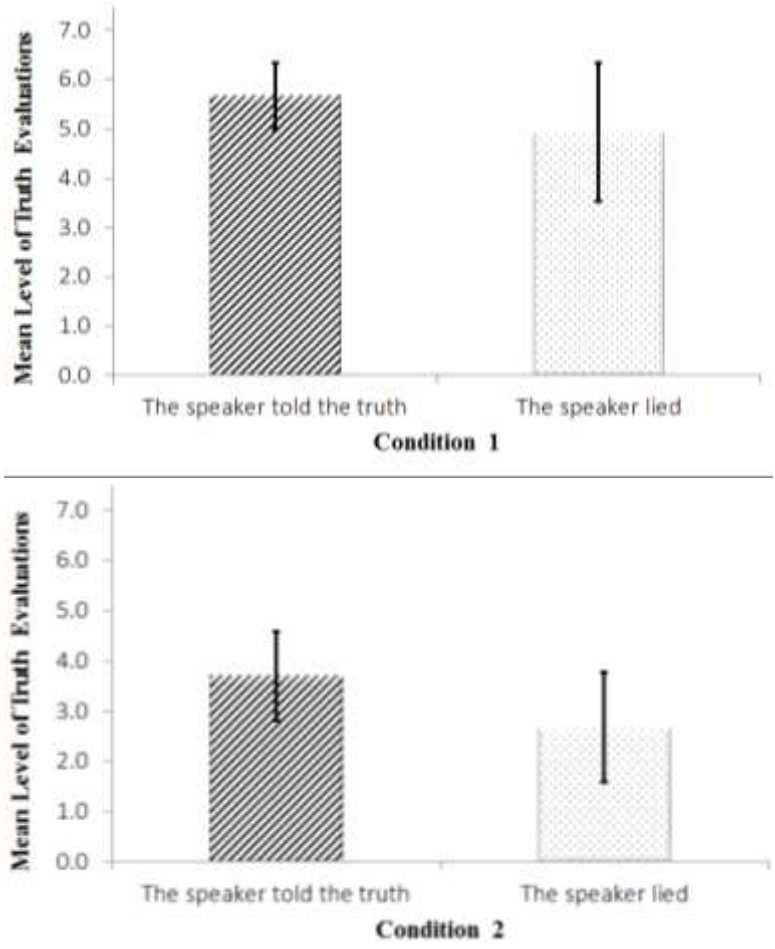

Figure 4. Participants' Mean Level of Truth Evaluation per Statement for each Condition.

Discussion

Results indicate that participants took PCIs into consideration while performing truth evaluations. False PCIs significantly affected truth evaluations of the target sentence, to the extent that it made participants assess a literally true sentence as a lie (mean = 3.20 [less than 4]). It is important to note, however, that while items in condition 2 were viewed as lies, they were not viewed as full-fledged lies.

Contrary to our predictions, the confidence in the truth evaluations performed under condition 2 was high (mean = 6.01) and not significantly different from condition 1 (mean = 6.10). There was also no significant difference in respect to confidence, between items in condition 2 perceived as true to those perceived as lies. The results concerning participants' confidence were somewhat surprising, but they suggest that speakers feel comfortable performing truth evaluations beyond "what is $said_{min}$"/explicatures.

Another interesting result concerns the degree of variation in responses in respect to condition 2. Each item in condition 2 was perceived, at least once, as true and at least once, as a lie. Similarly, for most participants, items in condition 2 were sometimes perceived as true and sometimes as lies. This suggests that participants' truth evaluations are (also) based on contextually derived inferences and are not restricted to a single concept of the basic-level meaning.

Finally, findings concerned with the task's question reflected participants' tendency to evaluate the truth of items under the statement "the speaker told the truth" as more truthful compared to items under the statement "the speaker lied." The impact of the statement on participants' truth evaluation, led us to think of another possible methodological problem which has not been addressed: the statement "the speaker lied" is not necessarily opposed to the statement "the speaker told the truth." That is, the term "true" is not necessarily the opposite of the term "lie," but rather of the term "false." The distinction between "lie" and "false" is less pronounced in Hebrew than in English, but could have affected the results nonetheless. From this, it could be that participants who viewed a target

sentence as a lie, would not have viewed it as false if so asked. It could be argued, however, based on the claims from the lying/misleading dispute, that since the act of lying is tied to the perceived "said" level of meaning, when participants evaluated the target sentence as a lie (to some extent) it testified that they viewed the PCI as being part of the basic-level meaning (by which the speaker is judged as telling the truth).

EXPERIMENT 2

Experiment 2 was designed as an online test and aimed to strengthen the results from experiment 1, which indicated that PCIs influence speakers' truth evaluations. In this experiment, only "the speaker told the truth" version was used, since this version was found to be the strictest between the two versions used in experiment 1 for evaluating an item as a lie.

Participants

Thirty students from Tel Aviv University (17 women, 13 men; mean age 25.70, SD = 3.83) participated in the experiment. All native speakers of Hebrew, and none spoke a language other than Hebrew before age 6.

Stimuli

Experimental stimuli were identical to those in experiment 1. In addition, 40 fillers were prepared (20 per list). Thus, each participant saw a total of 32 stories: the 12 experimental items from experiment 1, and the added 20 fillers. Four types of fillers were constructed for each list: literally false (12), literally true (4) and literally false that were cases of either politeness (2) or metaphor (2). The fillers were constructed in order to: 1) create literally true items in addition to the experimental ones; 2)

balance between literally true items (16) and literally false items (16); 3) create nonconventional literally false items (since the 6 items in condition 2 were also nonconventional in nature). See Appendix A for an example of each of these filler types.

Apparatus

The experiment was constructed and run using E-prime software version 10.242, on an HP Compaq Elite 8300 Micro-tower desktop computer, screen size 1280x1024 pixels. Response latencies were collected using a PST Serial Response Box.

Procedure

Each participant took part in an individual session conducted at a closed, separate room containing a personal computer, a response key and a keyboard. Each session lasted approximately 30 minutes.

Participants read instructions on the computer accompanied by the experimenter. To ensure that the participants were thoroughly familiarized with the procedure the experimenter had demonstrated one trial and asked participants to practice, in his presence, the two practice stories (literally true and literally false).

Each story, including the practice ones, began with the word "READY" in the middle of the screen. When participants felt ready to begin the trial, they pressed the space-bar and the story appeared without the target sentence. Participants were instructed to read the passage at a comfortable, normal reading pace. After finishing reading the story participants were asked to press the space-bar again. A crosshair "+" appeared in the middle of the screen for 500ms, followed by the target sentence. Participants were then instructed to respond, as fast and accurately as they can, with a "Yes" if they believe the speaker told the truth when expressing the target sentence or with a "No" if they believe the

speaker did not tell the truth when expressing the target sentence. Responses were performed using keys marked "Yes"/"No" on the response key. To ensure participants payed attention to the task, following the target sentence a comprehension question appeared. The comprehension questions were phrased as facts related to information from any part of the story, apart from information related to the target sentence. Participants were instructed to answer "Yes" if the fact is true, or "No" if the fact is false. The 32 items were randomized for each participant. Figure 5 illustrates the procedure of a single trial.

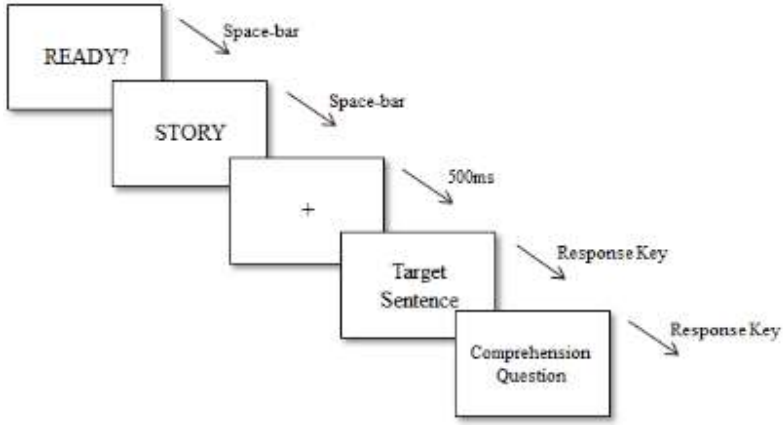

Figure 5. The Procedure of a Single Trial.

Participants' responses were gathered in respect to target sentences (accuracy and Response Time [RT]) and comprehension questions (accuracy only). Participants were considered accurate in respect to the target sentence if they responded "Yes" to literally true target sentences, and "No" to literally false ones. Literally true target sentences were the experimental items (condition 1 or 2) and 4 literally true fillers. Literally false target sentences were fillers only (including the politeness and metaphorical items). Response time for target sentences was measured from the onset of the target sentence until a yes-or-no key response was made. Participants were considered accurate in respect to the comprehension question if they responded "Yes" to a fact that appeared in

the story, and "No" to a fact that did not appeared in the story. Data was used only from participants whose accuracy in respect to the presented fact was above 80%.

Results

Data was used from all participants, since all participants answered 90% of the comprehension questions correctly. An analysis of participants' responses shows that participants were less accurate in target sentences that were literally true while implicating something false (condition 2) compared to when they were only literally true (condition 1). We extracted participants' accuracy in respect to target sentences for each condition. A two-tailed paired t-test yielded a significant effect of the condition on participants' accuracy: $t(29) = 4.88$, $p < 0.001$, where condition 1 ($M = 0.78$, $SD = 0.14$) was more accurate than condition 2 ($M = 0.61$, $SD = 0.18$). This means that the target sentences that were literally true while implicating something false (condition 2) were viewed more frequently as lies, compared to when they were only literally true (condition 1).

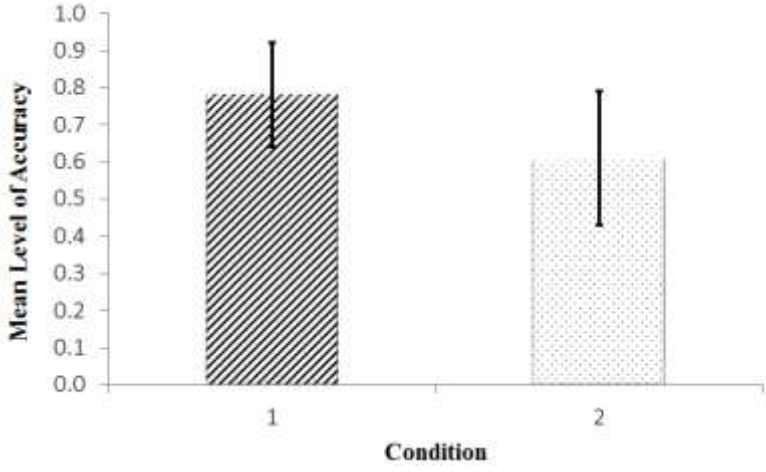

Figure 6. Participants' Mean Level of Accuracy per Condition (1 = Literally True vs. 2 = Literally True with a False PCI).

An analysis of participants' response time, for accurate responses only, revealed that response time to target sentences that were literally true while implicating something false (condition 2) was longer compared to when they were only literally true (condition 1). A two-tailed paired t-test showed that the mean response time for condition 1 (M = 3082.35, SD = 1199.27) compared to condition 2 (M = 3895.27, SD = 1509.40) yielded a significant effect: $t(29) = -3.24$, $p < 0.01$.

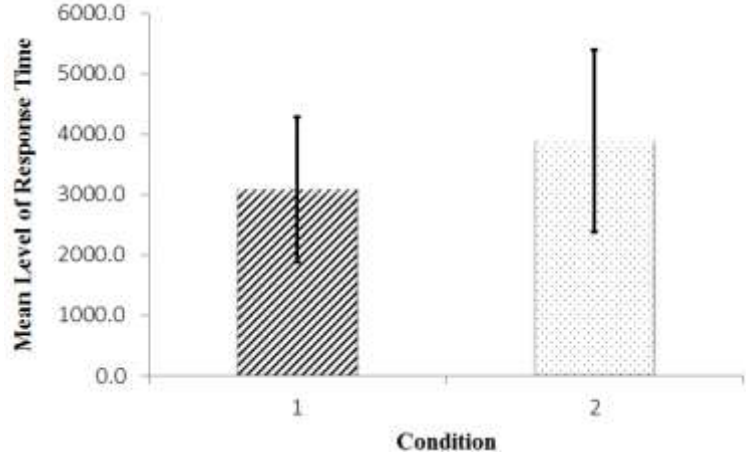

Figure 7. Participants' Mean Level of Response Time per Condition (1 = Literally True vs. 2 = Literally True with a False PCI).

We also predicted that truth evaluations will vary among participants. Our findings show that condition 2 in each item was perceived at least once as true, and at least once as a lie. Also, condition 2 in 29 (out of 30) participants was perceived, at least once, as true and, and at least once, as a lie.

Discussion

Similarly, to the previous experiment, results here showed that participants took into account PCIs when performing truth evaluations. The error rate for truth evaluation indicates that nearly 40% of all items in condition 2 were viewed as lies. This result reinforces the results from

experiment 1, as it demonstrates that when a Yes/No truth evaluation is forced upon participants, condition 2 is considered as a lie rather than "kind of a lie." Another interesting result concerns participants' response time, which was longer for condition 2 than for condition 1. The longer response time is interesting as it might suggest that, while participants are seemingly confident with their truth evaluations (experiment 1), there is some interference when classifying target sentences in condition 2 as not true. This interference can be interpreted as reflecting hesitation, which means that perhaps response time captures a more sensitive, or simply different, aspect of the participants' confidence. Alternatively, it could also mean, that the task was harder for them regardless of their confidence.

Experiment 2 also revealed one methodological problem concerning the stimuli. Although participants were asked to read the story at a comfortable pace, we believe that the unexpected error rate in respect to condition 1, and the long response time in respect to both conditions, may have resulted from the length of the texts. Nevertheless, all of the participants have demonstrated that they understood the stories and the tasks well (in all cases, at least 90% of the comprehension questions were answered correctly).

GENERAL DISCUSSION

The results from experiments 1 and 2 indicate that PCIs influence speakers' truth evaluations. Literally true proposition with false PCIs were often enough viewed by participants as not true, and even as lies. The extent to which these cases were considered as lies depended on the method that was employed. In experiment 1, items in condition 2 were viewed as lies but not as full-fledged lies. In experiment 2, when forced to select either Yes or No, almost 40% of the items in condition 2 were viewed as not true. Participants' confidence, measured in experiment 1, was not significantly different when we compared condition 1 to condition 2. It was also not significantly different when we compared items in condition 2 that were viewed as true to items in condition 2 that were viewed as lies. This is particularly interesting, as it demonstrates that even

when what the speaker said is literally true, participants feel comfortable with classifying it as a lie if the PCI is false. This does not mean that this truth evaluation is not somewhat different for speakers. The response time measured in experiment 2 indicates that classifying items in condition 2 as true took significantly longer than classifying items in condition 1 as true. In both experiments, truth evaluations in respect to condition 2 varied among participants and (in most cases) per participant. This suggests that in real interaction, there is no single basic-level meaning which is solely responsible for truth evaluations.

The findings in experiment 1 and 2, which indicate that PCIs influence speakers' truth evaluations, support the interactionally-oriented approach in at least two ways. The first: participants' truth evaluations were influenced and even determined by the existence of a false PCI, even when it was clear that the proposition expressed is literally true. Among the various definitions for the basic-level meaning, only the interactionally-oriented approach allows strong implicatures to play a role in the basic-level meaning (i.e., the PII). The second: truth evaluations of items that were literally true, but implicated something false, varied among participants. Here, as well, only the interactionally-oriented approach recognizes that there is no unanimity between speakers regarding what constitutes the basic-level meaning in a given context.

If so, could it be that the literature that already accepts some pragmatic inferences as being part of "what is said" should accept PCIs, as well? The answer is most likely "no." While our findings indeed indicate that PCIs contribute to speakers' truth evaluations, they also indicate that most participants viewed target sentences in condition 2 as true or nearly true, and that even when they were designated as lies, it was done with some hesitation or rather difficulty. It could be, however, that the question above is misleading, and that in the case of PCIs (like with other pragmatic inferences) it is not a matter of being part of what is actually said or not, but rather a matter of their propensity to contribute and influence the basic-level meaning (Sternau et al. 2015 [and also Recanati 2010: 12]). In most cases, PCIs will not serve as the basic-level meaning, i.e., the meaning by which the speaker is judged as telling the truth. In other cases, they might.

This is because speakers evaluate truth based on the strength of the interpretation, regardless of the type of pragmatic inferences that form this interpretation.

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APPENDIX A

Appendix A provides an example for each of the fillers used in experiment 2.

Literally false:

Ruthi sent Ofir, her 10 years old son, to the grocery store to buy milk and bread. She gave him a 20 NIS bill (~5 USD) and he left for the grocery store. On his way to the grocery store, Ofir saw a candy shop, and spent all the money his mother gave him on chocolates. Upon returning without the groceries, Ruthi asked him what had happened. Ofir replied: "The money fell out of my pocket."

Literally true:

Shira decided to register on J-Date. She filled out her details and attached an old photo, in which she appeared more attractive than she looks today. One day a young man contacted her through the website and they corresponded a bit. They decided to switch to a telephone conversation, when the young man suddenly told her that she sounded older than he had assumed from the photo. Shira was embarrassed and replied: "That photo is old and a bit outdated."

Literally false – politeness:

Shiran bought a wedding dress from an acclaimed fashion designer. On her wedding day, Shiran along with her friend Yaira arrived at the designer's studio. She tried on the dress and saw that it was still too large for her. The designer apologized and said that there is no time to fix it. Yaira was mortified – the dress looked awful. Teary-eyed Shiran turned to her and asked what she thought. Yaira replied: "You look absolutely wonderful."

Literally false – metaphor:

Shimrit and Nimrod were getting ready for dinner with some friends. They were just about to head out when Shimrit remembered she wanted to wear the new earrings she bought. Nimrod looked at her, smiling, and told her she already has enough jewelry. Shimrit did not understand what he meant, because she was not wearing any jewelry, and while she was searching she asked him what jewelry he was referring to. To that Nimrod responded: "Your smile is a jewel."